



Vulcan Seals Type 1511J

Technical Data Sheet



Product Description

Vulcan Seals Type 1511J is a radially-compact elastomer bellows "non-pusher" design, with high flexibility to readily accommodate service misalignment and provide extended service in medias prone to clogging.

The seal drive is provided by the elastomer bellows tightly gripping the shaft from a contact point under the coil end, providing bi-directional "non-pusher" performance that minimises shaft fretting.

Supplied with a Vulcan Seals Type 31 'O'-ring-mounted stationary with anti-rotation provision to suit high-torque applications such as viscous or high solids medias, the Vulcan Seals Type 1511J is fully compliant to ANSI short length seal chamber dimensions.

Why Choose the Vulcan Seals Type 1511J?

- Radially compact bellows design provides excellent flexibility and durability in reduced radial clearance applications.
- Designed to suit ANSI short length seal chambers.
- 'O'-ring-mounted stationary with anti-rotation provision to suit high-torque applications such as viscous or high solids medias.
- Convoluted bellows provides high flexibility to accommodate seal misalignment and shaft end-float.
- Suitable for light to medium duties.

Standard Face Material Combinations

Rotary Face	Stationary Face	Complete Seal Code
VSS1 Silicon Carbide	VSR1 Silicon Carbide	SS
VCP1 Carbon	VAW1 Ceramic	C
VCP1 Carbon	VSR1 Silicon Carbide	D
VCP1 Carbon	304 Stainless Steel*	Q
VCP1 Carbon	VTN1* Tungsten Carbide	F

Guaranteed Stock/Material Elastomers: Viton™/FKM, EP, Nitrile and Metallurgy 304SS
*Non-stock guarantee

Elastomer Temperature Capabilities

	Minimum	Maximum
Nitrile	-30°C	+120°C
EPDM	-40°C	+140°C
Viton™/FKM	-30°C	+230°C
FEPM/AFLAS®	-10°C	+250°C
FFKM	-50°C	+315°C

Pressure: Up to 16 bar (232 psi)

Compliance & Certificates



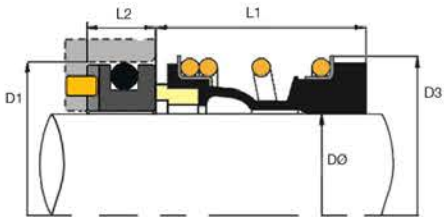
Also available with built materials that adhere to the above compliance standards and certificates. Please enquire about your requirements.

Mechanical Seal Replacement Range

Vulcan Seals Type 1511J is a dimensional replacement mechanical seal for the following seal ranges:

- U.S. Seal® | Type G with Type 3 seat*

*Rotary Face | **Stationary Face



Dimensional Data

DØ (Metre)	Size Code	D1	D3	L1	L2	DØ (Imp.)	Size Code	D1 (in)	D1 (mm)	D3 (in)	D3 (mm)	L1 (in)	L1 (mm)	L2 (in)	L2 (mm)
12	0120	25.40	22.00	20.62	7.93	0.500	0127	1.000	25.40	0.866	22.00	0.812	20.62	0.312	7.93
16	0160	31.75	26.00	22.23	10.28	0.625	0158	1.250	31.75	1.024	26.00	0.875	22.23	0.405	10.28
18	0180	34.93	32.00	22.23	10.28	0.750	0191	1.375	34.93	1.260	32.00	0.875	22.23	0.405	10.28
20	0200	38.10	34.00	23.80	10.28	0.875	0222	1.500	38.10	1.417	36.00	0.937	23.80	0.405	10.28
22	0220	38.10	36.00	23.80	10.28	1.000	0254	1.625	41.28	1.535	39.00	1.000	25.40	0.437	11.10
24	0240	41.28	38.00	25.40	11.10	1.125	0286	1.750	44.44	1.654	42.00	1.062	26.97	0.437	11.10
25	0250	41.28	39.00	25.40	11.10	1.250	0317	1.875	47.63	1.811	46.00	1.062	26.97	0.437	11.10
28	0280	44.44	42.00	26.97	11.10	1.375	0349	2.000	50.80	1.929	49.00	1.125	28.58	0.437	11.10
30	0300	47.63	44.00	26.97	11.10	1.500	0381	2.125	53.98	2.126	54.00	1.125	28.58	0.437	11.10
32	0320	47.63	46.00	26.97	11.10	1.625	0412	2.375	60.33	2.205	56.00	1.375	34.93	0.500	12.70
33	0330	50.80	47.00	28.58	11.10	1.750	0444	2.500	63.50	2.402	61.00	1.375	34.93	0.500	12.70
35	0350	50.80	49.00	28.58	11.10	1.875	0476	2.625	66.68	2.520	64.00	1.500	38.10	0.500	12.70
38	0380	53.98	54.00	28.58	11.10	2.000	0508	2.750	69.85	2.625	66.70	1.500	38.10	0.500	12.70
40	0400	60.33	56.00	34.93	12.70	2.125	0539	3.000	76.20	2.717	69.00	1.688	42.88	0.562	14.28
43	0430	63.50	59.00	34.93	12.70	2.250	0571	3.125	79.38	3.071	78.00	1.688	42.88	0.562	14.28
44	0440	63.50	61.00	34.93	12.70	2.375	0603	3.250	82.55	3.150	80.00	1.812	46.02	0.562	14.28
45	0450	66.68	61.00	38.10	12.70	2.500	0635	3.375	85.73	3.268	83.00	1.812	46.02	0.562	14.28
48	0480	69.85	64.00	38.10	12.70	2.625	0666	3.375	85.73	3.346	85.00	1.937	49.20	0.562	14.28
50	0500	69.85	66.70	38.10	12.70	2.750	0698	3.500	88.90	3.543	90.00	1.937	49.20	0.626	15.88
53	0530	76.20	69.00	42.88	14.28	2.875*	0730	3.750	95.25	3.780	96.00	2.062	52.37	0.626	15.88
55	0550	79.38	71.50	42.88	14.28	3.000	0762	3.875	98.43	3.898	99.00	2.062	52.37	0.626	15.88
60	0600	82.55	80.00	46.02	14.28										
65	0650	85.73	85.00	49.20	14.28										
70	0700	88.90	90.00	49.20	15.88										
75	0750	98.43	99.00	52.37	15.88										

Dimensions in mm and inches
*Non-stock guarantee



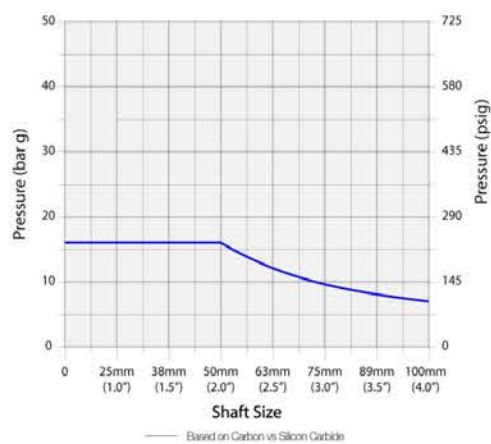
Maximum Operating Pressure

The PV Chart shows the maximum operating pressures of this Vulcan Seals type, based on the seal face materials used. Different lines on the chart indicate different material combinations, as shown underneath.

It also assumes stable operation in a clean, cool, lubricating and nonvolatile fluid with an adequate flush rate.

For more in-depth pressure rating calculations based on specific material combinations and application conditions, please consult us.

PV Chart



Application Conditions

	Criteria	Multiplier
Product Fluid	Lubricating fluids	X 1.00
	Aqueous solutions / Water	X 0.85
Temperature	Below 70°C (158°F)	X 1.00
	71°C to 120°C (160°F to 248°F)	X 0.85
	121°C to 175°C (250°F to 347°F)	X 0.75
	Over 176°C (349°F)	X 0.60
		X 0.60
Speed	Up to 1750 rpm	X 1.00
	1750 to 3600 rpm	X 0.80

Face and Seat Materials

Combination	Multiplier
Carbon vs Ceramic	x 0.50
Carbon vs RB Silicon Carbide	x 1.00
Carbon vs Stainless Steel	x 0.30
Carbon vs Tungsten Carbide	x 0.90
SiSiC vs RB Silicon Carbide	x 0.41

Example Calculation for Vulcan Seals Type 1511J

- A. Shaft size: 38mm therefore pressure is 16 bar (from PV Chart)
- B. Media: Water (multiplier = 0.85)
- C. Temperature: 50°C (multiplier = 1.00)
- D. Speed: 1450 rpm (multiplier = 1.00)
- E. Face combination: Carbon vs Silicon Carbide (multiplier = 1.00)

For this particular Vulcan Seals Type 1511J seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E
16 bar x 0.85 x 1.00 x 1.00 x 1.00 = 13.60 bar

Guidance Only

Please note that due to the many operational and application variables that affect seal performance, the information given on this page is for guidance only.

We therefore strongly recommend careful individual testing and monitoring of all seals and related equipment for any proposed application.

Our policy is one of continuous technical and efficiency improvement. As such, all specifications may be subject to change without prior notice.

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** Important: These limits are the theoretical elastomer or design limitations. For maximum theoretical operating pressure for your specific size and application please refer to calculation example within this data sheet. All performance information given is for guidance only and is dependent on material, operating and application factors that affect seal performance.